Linezolid

Cat. No.: HY-10394

CAS No.: 165800-03-3

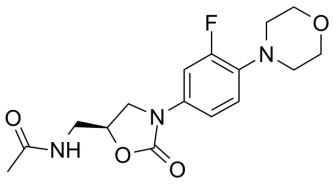
Molecular Formula: $C_{16}H_{20}FN_3O_4$

Molecular Weight: 337.35

Target: Bacterial; Antibiotic

Pathway: Anti-infection

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (296.43 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9643 mL	14.8214 mL	29.6428 mL
5 mM	0.5929 mL	2.9643 mL	5.9286 mL
10 mM	0.2964 mL	1.4821 mL	2.9643 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.41 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.41 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.41 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Linezolid (PNU-100766) is the first member of the class of oxazolidinone synthetic antibiotic. Linezolid acts by inhibiting the initiation of bacterial protein synthesis. Linezolid is used for the treatment of serious infections caused by Gram-positive bacteria that are resistant to several other antibiotics[1][2][3].

In Vitro

Linezolid (PNU-100766) prevents the synthesis of bacterial protein via binding to rRNA on both the 30S and 50S ribosomal subunits[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Acta Pharm Sin B. 2017, 52(6): 971-976.
- Microbiol Spectr. 2022 Mar 2;e0054121.
- Microbiol Spectr. 2022 Jan 12;e0099121.
- Microb Biotechnol. 2021 Mar 15.
- Antimicrob Agents Chemother. 2021 Jan 25;AAC.01445-20.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Clemett D, Markham A. Linezolid. Drugs. 2000 Apr;59(4):815-27; discussion 828.

[2]. Chiappini E, Conti C, Galli L et al. Clinical efficacy and tolerability of linezolid in pediatric patients: a systematic review. Clin Ther. 2010 Jan;32(1):66-88.

[3]. Perry CM, Jarvis B. Linezolid: a review of its use in the management of serious gram-positive infections. Drugs. 2001;61(4):525-51.

[4]. He MZ, Jiang YW, Cai C.Mechanisms and epidemiology of linezolid resistance in staphylococci.Zhonghua Jie He He Hu Xi Za Zhi. 2012 May;35(5):360-2.

[5]. Karau MJ, Tilahun AY, Schmidt SM, Clark CR, Patel R, Rajagopalan G.Linezolid is Superior to Vancomycin in Experimental Pneumonia Caused by Superantigen-Producing Staphylococcus aureus in HLA class II Transgenic Mice.Antimicrob Agents Chemother. 2012 Jul 30.

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